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## CLAIMS

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1. A substrate processing apparatus,  
comprising:

a processing vessel that defines a  
processing space;

10 an ultraviolet light source that  
irradiates ultraviolet light into the processing  
vessel;

an opaque case made of quartz that  
covers an inner wall of the processing vessel  
15 and includes an opening arranged to face against  
the ultraviolet light source through which  
opening the ultraviolet light passes;

a heater portion that heats a  
substrate introduced inside the opaque case to a  
20 predetermined temperature;

a holding member that holds the  
substrate above the heater portion; and

rotational drive means for rotating an  
axis of the holding member that penetrates  
25 through the heater portion.

30 2. The substrate processing apparatus  
as claimed in claim 1, wherein the opaque case  
includes

a side portion case that is arranged

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to surround a periphery of the substrate held by the holding member and includes a first opening through which the substrate passes;

5 a top portion case that is arranged to cover a top of the side portion case and includes a second opening that is arranged to face against the ultraviolet light source; and

10 a bottom portion case that is arranged to cover a bottom of the side portion case and includes a third opening through which a lifter member that raises and lowers the substrate passes.

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3. The substrate processing apparatus as claimed in claim 2, wherein the opaque case includes a cylinder case that covers an outer  
20 periphery of the heater portion.

25 4. The substrate processing apparatus as claimed in claim 3, wherein the heater portion accommodates a heating element that is contained inside a transparent case made of quartz.

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5. The substrate processing apparatus  
as claimed in claim 4, wherein an internal space  
of the opaque case and an internal space of the  
transparent case are depressurized at the same  
5 time.

10 6. The substrate processing apparatus  
as claimed in claim 4, wherein a SiC heater  
plate that is heated by the heating element is  
provided on a top surface of the transparent  
case, the heater plate being introduced inside  
15 the opaque case via the third opening of the  
bottom portion case.

20 7. The substrate processing apparatus  
as claimed in claim 1, further comprising:  
a UV protective glass window blocking  
ultraviolet light that is provided at a side  
25 surface of the processing vessel.

30 8. The substrate processing apparatus  
as claimed in claim 7, wherein the UV protective  
glass window includes  
a first window that is arranged at a

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position shifted toward one side with respect to a periphery of the substrate held by the holding member; and

5 a second window that is arranged at a position shifted toward another side with respect to the periphery of the substrate held by the holding member.

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9. The substrate processing apparatus as claimed in claim 7, wherein the UV glass window is configured into a dual structure  
15 including UV protective glass that blocks ultraviolet light and transparent quartz that are arranged to face against each other.

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10. The substrate processing apparatus as claimed in claim 9, wherein the UV glass window includes

25 a first window that is arranged at a position shifted toward one side with respect to a periphery of the substrate held by the holding member; and

30 a second window that is arranged at a position shifted toward another side with respect to the periphery of the substrate held by the holding member.

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11. The substrate processing  
5 apparatus as claimed in claim 1, wherein  
the holding member includes a  
plurality of arm portions that are made of  
transparent quartz, the arm portions being  
arranged to support a bottom portion of the  
10 substrate.

12. The substrate processing  
15 apparatus as claimed in claim 11, wherein the  
arm portions support the bottom portion of the  
substrate through point connection with said  
bottom portion.